

INVERTEBRATE INTERESTS IN THE WORLD CONSERVATION UNION'S SPECIES SURVIVAL COMMISSION

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Several invertebrate groups (Lepidoptera, Odonata, social insects, orthopteroid insects, water beetles, molluscs) have become the focus of Specialist Groups in the IUCN's Species Survival Commission network. The strong insect bias reflects historical zeal and the need for other such taxon-focused attention is being addressed at present; some candidate taxa for future specialist groups are noted. The role of specialist groups is to assess the conservation needs of 'their' taxa and produce and implement an Action Plan, formulating and implementing the priority steps for conservation. An Invertebrate Conservation Task Force has been formed recently to address relevant priorities and needs. □ *Invertebrate conservation, Red Data Books, molluscs, insects, action plans.*

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The International Union for the Conservation of Nature and Natural Resources (IUCN), now known as the World Conservation Union, was founded in 1948 and has immense influence as the global leader in conservation matters. It is a membership organisation which includes about 60 governments, more than 100 government departments and about 500 non-government organisations, collectively representing 120 countries.

However, invertebrate conservation is a relatively recent component of its activities, for which the initial impetus was the formation of a 'Lepidoptera Specialist Group' in the late 1970s. This was followed closely by the Invertebrate Red Data Book project, leading to publication of Red Data Books for Invertebrates (Wells et al., 1983) and Swallowtail Butterflies (Collins & Morris, 1985). A number of regional Red Data Books for invertebrates have followed more recently, particularly from Europe. The mid-eighties was marked also by the formation of several other invertebrate specialist groups, and an 'Invertebrate Issue' of the IUCN Bulletin (Collins, 1987). That early activity was attributable largely to availability of funding, and presence of two (at one time, three) permanent staff members (with assistance) at the then Conservation Monitoring Centre. Their work emphasised the formation of a preliminary database on threatened invertebrates, leading directly to the compilation of the two Red Data Books noted above. This period is discussed by Wells (1989), who emphasised that decline in invertebrate work was necessitated by reduction in core funding,

and the reorganisation of the Conservation Monitoring Centre as the World Conservation Monitoring Centre, administered jointly by IUCN, WWF and UNEP.

The largest of the six commissions of IUCN, the Species Survival Commission (SSC) is playing an increasing role in promoting invertebrate conservation, through the activities of a number of its Specialist Groups, with considerable impetus coming from a meeting in London in 1989 at which (for the first time) representatives of the various invertebrate specialist groups and other enthusiasts discussed some of the major issues and constraints. Perhaps the most important outcome was the decision to form an 'Invertebrate Conservation Task Force' to help coordinate IUCN/SSC interests, determine future priorities and devise 'Strategies' for promoting and implementing invertebrate conservation. This has proved more difficult than anticipated: the SSC network is composed largely of volunteers, and most members of the relevant Specialist Groups (below) can devote only a small (and usually unpredictable) portion of their time to such activities. Participation by chairs of the current groups, or their nominees, and by other devotees was clearly needed, with a chair who had adequate time and support. The need for global representation ensured that the Task Force members would be widely dispersed, with few chances of personal encounters, and potential chairs were among the most heavily committed people, simply because most of the people suggested for this role were known *because* of their relevant activities!

This account sets out some of the present attention to invertebrates within the activities of the SSC, and suggests how this might be increased.

RECOMMENDATION 41

The role of invertebrate conservation in IUCN activities was acknowledged formally by the adoption of the statement known as 'Recommendation 18/41'.

At the 18th General Assembly of IUCN, Perth, WA, 28 Nov-5 Dec 1990, this resolution on 'Conservation of Insects and other Invertebrates' was adopted by consensus. The background to the resolution, and its text, are given by Collins (1991). The resolution was proposed by the Royal Entomological Society and the Fauna and Flora Preservation Society, and was prepared by wide consultation: with the Joint Committee for the Conservation of British Insects, the Invertebrate Working Group of the National Zoo Federation, the SSC invertebrate specialist groups, the Societas Europaea Lepidopterologica, and the (French) Office pour l'Information Eco-entomologique. As Collins (1991) noted, this document has helped to put beliefs on the conservation of insects firmly into an international perspective.

Among other things, the Resolution urged for assistance in identifying and executing priority activities to conserve invertebrates, and support for SSC activities on invertebrate conservation.

THE SSC INVERTEBRATE GROUPS

The mission of the SSC ('to preserve biological diversity by developing and executing programmes to save, restore and wisely manage species and their habitats') is pursued through the medium of 'Specialist Groups', most of them taxon-focussed. This approach represents the philosophy that 'species' are meaningful units in communicating conservation concern, whereas other levels of 'biodiversity' are less tangible to many people. Other groups are 'discipline-based' (for example Captive Breeding, Reintroductions, Sustainable Use of Wild Species) and a few have been community or habitat based (Coral reef fish). Each group is fostered through a chair, appointed for a three year period and, whereas there is traditional continuity and long term membership of many groups, change is also frequent. The four goals of the SSC are:

1. To assess the conservation priorities for species and their habitats.
2. To develop plans for their conservation.
3. To initiate actions needed for the survival of species.
4. To provide an expert resource network on the conservation of biodiversity.

The aims of any of the taxon-based groups, which range in scope from single species (some mammals) through families to orders or total regional representation are (1) to determine the conservation needs for 'their' group and to set priorities, within these, (2) to produce Action Plans setting out the major needs for conservation in practice, and (3) to implement those needs, which therefore need to be clarified in some detail, including budgeting, and be practical. Recommendations for action typically range from the need for status evaluation through field survey, for habitat protection, captive breeding programmes, to aspects of legal protection or prohibition of capture. In addition, possibilities for capitalising on, or gaining mutual benefit from priorities of other groups can be relevant: many important centres for dragonflies coincide with those of birds, for example. Formulation of priorities (based both on individual taxa and important assemblages) and design of an Action Plan involves considerable coordination and, sometimes, original research to accord credibility. Action Plans, which have no legal status, are disseminated widely and provide definitive foci for conservation measures.

The number of members of a specialist group varies according to the needs perceived, and the availability of suitable people. Collectively, the 95 groups in the SSC network have about 4800 members (at March 1993).

The six present invertebrate specialist groups are:

Mollusca (18 members)

Lepidoptera (15 members: this group at one time encompassed only butterflies, as the 'Butterfly specialist group')

Social insects (18 members: at one time 'Ant specialist group')

Odonata (15 members)

Orthopteroid insects (15 members)

Water Beetles (31 members)

The Captive Breeding Specialist Group has a discrete 'subgroup' (12 members) for invertebrates.

Geographical coverage by specialist groups is inevitably uneven at present. Much impetus for invertebrate taxon-focussed conservation has come traditionally from Britain and Europe, or from North America. Group memberships reflect

this, with about 70% of collective members based in these areas. The 51% European membership base in the six main invertebrate groups is influenced heavily by the 'water beetles group', whose historical base (21/31 European members) has consolidated in that area. All six groups have members in those areas, and involvement from elsewhere is much more sporadic. Membership from the southern continents, for example, is 5 (Africa), 6 (South America) and 8 (Australasia). Also, it could be suggested that the geographical bias in memberships does not represent adequately many areas where conservation needs are greatest and most difficult to achieve and pursue. Species-focussing for conservation is, inevitably, more difficult in areas of high biological diversity and low human wealth, and where there are few resident specialists in many groups of animals and plants. There is undoubted merit in recruiting interest from those parts of the world and not imposing a eurocentric suite of conservation values likely to alienate more local interests. One theme of the Swallowtail Action Plan (below), for example, was to explore possibilities of promoting ranching of rare taxa as a sustainable cottage industry, as has been pioneered in Papua New Guinea.

ACHIEVEMENTS OF THE GROUPS

Individually, members of all the above groups are among the leading advocates for invertebrate conservation. Some groups have been founded only recently, and the work of the 'Orthopteroid insects' group, for example is only starting to be defined; the 'water beetle' group draws directly on the expertise of the Balfour-Browne Club in Britain, already well-organised as a group concerned about the fate of aquatic Coleoptera and their habitats. The Mollusc group has issued several numbers of a mollusc conservation newsletter ('*Tentacle*'), and the Odonata group produces 'Reports of the Odonata Specialist Group', at the rate of one or two a year.

Only one Action Plan for invertebrates has been published so far. This, for the Swallowtail Butterflies (New & Collins, 1991), drew directly from the comprehensive account by Collins & Morris (1985) and set out a representative series of 34 projects which collectively appraised the needs and practicalities for conserving the 78 species or subspecies (of 573 members of the Papilionidae) perceived as 'Threatened' in the earlier volume. Parts of this plan are the subject of active advocacy for implementation at present.

The Lepidoptera specialist group has also produced a Directory of Lepidoptera Conservation Projects (New, 1990) which it is hoped to augment and update at intervals and a volume on *Conservation Biology of Lycaenidae* (New, 1993), setting out a partial perspective for the largest family of butterflies.

Action plans for Mollusca and Odonata are well-advanced, and both groups have defined the urgent needs for their taxa. Other groups are moving towards assessing the scope and feasibility of Action Plans. The proceedings of a Mollusc Specialist Group meeting, which includes a framework for mollusc conservation action, are in press, and a recent report on European Mollusc Conservation needs (Wells & Chatfield, 1992) also emanated from the Specialist Group.

The success of any specialist group depends greatly on the zeal and enthusiasm of its members, and their ability to cover the conservation needs of the taxa.

NEED FOR ADDITIONAL SPECIALIST GROUPS

Clearly, the existing specialist groups are by no means fully representative of the vast panorama of invertebrate animals, or of their geographical distributions. There is a strong bias toward the insects, and several 'levels of coverage' are present - from a suite of orders, through single orders, to habitat-based 'subsets', or cross-groupings based on a particular way of life. Each contributes in different, complementary ways to a broader picture of the needs of particular invertebrate taxa.

Formation of other groups is likely to occur within the next few years, to broaden the coverage, and a number of candidate groups have been suggested. Most of these concentrate on 'flagship groups', or groups of perceived value as indicator taxa. The range of possibilities is enormous, and it is important that the most suitable invertebrate groups should be promoted through the limited logistic resources available rather than form groups with little 'realistic' conservation management potential.

It is important that

- i) The range of taxa covered is increased.
- ii) The most accessible 'key' taxa of the world's major ecosystems are addressed, and the range of habitats increased; the taxa should be ecologically informative.
- iii) A clear role for each new group is seen, rather than simply forming a group with no clear

purpose, perhaps because of strong individual advocacy.

- iv) Where possible, complementarity between the activities of different groups is sought. The groups should not overlap in interest unduly – for example by any ‘competition’ between taxon-focussed and discipline-focussed groups, unless effective (even, formal) communication occurs between the parties involved.
- v) A sufficient number of concerned and knowledgeable volunteers to form an effective group is available and the major geographical areas where the taxon occurs should have representation on the group. Where possible professional and non-professional members should be encouraged
- vi) Where possible, the taxa should already be a main interest of societies, such as entomological groups, mollusc enthusiasts, crustacean specialists (etc), so that there may be established avenues for communication to a broad knowledgeable audience, and for seeking advice, or opportunity for group meetings at conferences or seminars, and
- vii) That logistic support be available to sustain group’s activities.

THE TASK FORCE

One role of the Task Force, which is still in the process of defining the scope of its activities, is to recommend optimal taxa around which to attempt to form additional specialist groups, and to evaluate suggestions and proposals received for these. It will play a part in identifying important gaps in SSC invertebrate coverage, and advise on policy and programme development with respect to invertebrates. The broader aspects of its brief involve identifying avenues for promoting invertebrate conservation, identifying priorities in their conservation needs and seeking ways for these to be addressed constructively. These issues are to be combined with surveys and summaries of existing information, examination of the methodologies and approaches needed, and promoting the role of invertebrates in conservation assessment, the roles of *ex situ* conservation, formulating protocols for reintroduction and genetic maintenance, and education to improve the public image and appreciation of invertebrates. In summary, these activities collectively involve increasing the amount of logistic support for invertebrate conservation, and endeavouring to apply this in the most effective ways.

THE ‘RED LIST’

The IUCN Red List of Threatened Animals (1988, updated 1990) lists and categorises the status of globally threatened taxa, and is assembled from the databases of the World Conservation Monitoring Centre, with input from many knowledgeable workers, including the SSC network. Well over 2000 invertebrates (representing 9 phyla) are included, many listed by species but some genera or whole families (e.g. black corals, Antipathidae) are also noted where they are perceived to be under threat. Although valuable as an initial summary, listing of invertebrates in this way poses problems (for example, through lack of knowledge of precise status, or difficulty of species-level recognition), and there is a strong bias towards the faunas of temperate regions, where species-level ‘protective legislation’ and status evaluation is most zealous. For some tropical regions, there is a greater element of subjectivity in inclusions, because precise knowledge is lacking—often reflecting the lack of local-based expertise. The invertebrate Specialist Groups are involved in attempting to update the List to the greatest level of reliability possible, within their limited resources.

Nevertheless, the diversity of taxa listed - even without precise details of status - provides pointers for future need, and one role of the Task Force will be to evaluate these progressively and to refine the invertebrate component of this important document. Current attempts to redefine the IUCN categories of threat (Mace & Lande, 1991; Mace et al., 1993) will be of major importance in this work, and allocation of invertebrates accurately to one or other of these is often difficult. Indeed, it is by no means clear whether criteria for invertebrate threat categories should be the same as for vertebrates, and it may be necessary to develop a separate suite of quantifiable values for them.

CONCLUSION

The science of invertebrate conservation is developing rapidly, and the importance of invertebrates is becoming recognised more widely (and at more levels) than ever before. The formidable diversity of taxa involved, and the ecological ubiquity of many of the groups renders the task of their effective conservation daunting. Capability is limited at present, and there is a massive chasm between ideals and feasibility. The increasing profile of invertebrates fostered

by the IUCN, especially work on the various 'flagship' groups targeted by SSC specialist groups, is likely to be instrumental in increasing global appreciation of invertebrate biology and conservation needs, helping to placing some on a far higher level of practical attention than has been possible hitherto.

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